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THE LIGHT-ENERGY OF 2536A REQUIRED TO RENDER DEVELOPABLE A GRAIN OF SILVER BROMIDE

P. S. HELMICK

(ABSTRACT)

A photographic film was exposed to a measured quantity of monochromatic light-energy at 2536A, and the resulting number of silver bromide grains rendered developable by the exposure was determined by a direct microscopic count. It was thus possible to calculate the energy required to render developable a single grain of silver bromide. A mercury arc and an ultra-violet monochromator provided the monochromatic light-energy. Quantitative measurements of light-energy were made with a linear thermopile in combination with a Thomson galvanometer of figure of merit 4×10^{-10} amp/mm. One candle-meter on the thermopile gave a galvanometer deflection of 1500 mm. Preliminary results at this wave-length show that about 800 quanta are required to render a grain developable. Exposures made at other regions in the ultra-violet will be reported upon at a later date.

THE NATURAL ULTRA-VIOLET FREQUENCY OF SILVER BROMIDE

P. S. HELMICK

(ABSTRACT)

The ultra-violet maximum of the selective photo-electric effect can be calculated by expressions given by the following authorities:

1 Lubben,
$$\nu \text{ ion} = \nu \text{ undissolved salt} + 2Q/Nh;$$

2 Haber and Lewis,
$$Q = Nh\ (\Sigma\nu \text{ resultants} - \Sigma\nu \text{ reactants});$$

3 Haber,
$$\nu_v/\nu_r = \sqrt{M/m};$$

4 Lindeman,
$$V_0 = \sqrt{n c^2/m r^3}/2\pi;$$